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PATENTS, TRADEMARKS & RELATED INTELLECTUAL PROPERTY MATTERS

Docket: 03/118

Hon. Commissioner of Patents and Trademarks
Alexandria, VA 22313-1450

Date: May 12, 2005

In re Application of:

Max Harry Weil, et al.

Serial No.: 10/620,481

Group Art Unit: 3764

Filed: July 16, 2003

Examiner: Danton Demille

For: CONTROLLED CHEST COMPRESSOR

APPEAL FROM THE PRIMARY EXAMINER TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

Enclosed are the following:

1. APPEAL BRIEF FEE:
   a. Brief For Appellant (3 copies).
   b. Appendix To Brief (3 copies).
2. Enclosed check for $250.00 for the Appeal Brief fee.
3. Return Postcard.

The Commissioner of Patents and Trademarks is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Account No. 06-1985.

I hereby certify that this correspondence is being deposited with the United States Postal service as First Class mail in an envelope addressed to: Mail Stop Board of Patent Appeals and Interferences, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 on May 12, 2005.

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cc: Joe Bisera

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

In re Application of:

Max Harry Weil, et al.

Serial No.: 10/620,481 — Group Art Unit: 3764

Filed: July 16, 2003 — Examiner: Danton D. Demille

For: CONTROLLED CHEST COMPRESSOR

BRIEF FOR APPELLANT UNDER 35 CFR 1.192(c)

Hon. Commissioner of Patents
Alexandria, VA 22313-1450

May 12, 2005
Los Angeles, CA 90024

This is an appeal from the Examiner of Group Art Unit 3764 rejecting claims 33-45 which represent all remaining claims in the case.

REAL PARTY IN INTEREST

The real party in interest is assignee, Institute Of Critical Care Medicine, a nonprofit California corporation located at 35-100 Bob Hope Drive, Rancho Mirage, California 92270.

RELATED APPEALS AND INTERFERENCES

Applicant earlier filed an appeal in US application SN 09/678,616 filed October 4, 2000 which is pending and which has claims to related subject matter.

STATUS OF CLAIMS

Pending: Claims 33-45

Canceled: Claims 1-32

Appealed: Claims 33-40

STATUS OF AMENDMENTS

No amendment was filed subsequent to the final rejection.

SUMMARY OF THE INVENTION

The present invention relates to a chest compressor for treating a patient by repeatedly compressing his/her chest to stimulate blood circulation and breathing. The invention relates to a type of chest compressor that includes a piston (e.g. 62 in applicant's Fig. 2) that repeatedly moves down against the patient. A novel feature of the invention is that the actuator has a piston (62) that includes telescoping piston parts including a first or outer piston part (64) that fits in a cylinder (60), and a second piston or inner piston part (66) that fits in the first piston part. The result is that the actuator has a small height (H) and yet has the required long stroke.

Such compact telescoping actuator takes up little space so it can be more easily carried by an emergency worker. Such emergency workers are already loaded with a lot of equipment, and reducing the size of a chest compressor makes it more likely that an emergency worker will carry it to the patient. Also, in major disasters when there are several victims that all require chest compressions, they are stacked in ambulances. The height of the actuator above the patient's chest determines how much vertical space must be reserved for the patient. Applicant's actuator occupies only a small height (H in Fig. 2) above the patient's chest, to allow more patients to be stacked in an ambulance.

The actuator must apply a large force (e.g. 100 to 120 pounds, page 5, line 1). To achieve this, the inner piston part (66) is constructed with an inside diameter (which is exposed to pressured gas) at least half the inside diameter of the larger, outer piston part (64).

Applicant senses when the patient's chest has largely recovered (moved back up) after having been compressed, to immediately compress the chest again. This increases the total air flow to the patient, compared to always leaving enough time to assure that the chest has fully recovered.

The actuator can include a single pressing member (202 in Fig. 7)) lying on the cylinder axis and pivotally connected to a lower end of the piston to pivot about horizontal axes (208, 209). This minimizes the possibility that if the actuator is slightly tilted, that only one side of its lower end will press on the patient and hurt him/her.

A stabilizer (130, Fig. 2) is connected to the cylinder (the cylinder does not move up and down) and extends completely around the actuator without a gap of more than 90°. This avoids large tilt of the actuator.

ISSUES

All of the appealed claims were rejected as obvious over combinations of references. Accordingly, the only issue is whether or not each of these claims is obvious in view of the references.

GROUPING OF CLAIMS

The rejected claims do not stand or fall together. Each claim is discussed in the Argument section of this Appeal Brief.

ARGUMENT

1. The Prior Art

Arpin	4,702,231
Nowakowski	5,327,887
Kelly	5,738,637
Hewson	Re. 26,511
McClain	2,484,306

2. Discussion of Each Claim

Claim 33 was rejected as obvious over Arpin in view of Nowakowski. Claim 33 describes apparatus for applying compressions to a patient's chest which includes a reciprocating member (14, Fig. 2). The reciprocating member

includes a cylinder (60) forming a stationary frame, and at least two telescoping piston parts that include an outer piston part (64) that slides in the cylinder and an inner piston part (66) that slides in the outer piston part. Both piston parts are urged down during each cycle. The telescoping piston parts result in a large stroke for an actuator which has a small height (H) when stored or even when operating.

Arpin shows a chest compressor that is powered by an electric motor and that is indicated as having a single piston part. His Figs. 3 and 4 show his piston ("ram") when down and when up, showing a small stroke for a very tall actuator.

Nowakowski shows, in his Fig. 7, a device for compressing a patient's chest, which includes a crank shaft 31 that reciprocates a plunger 38. The plunger engages the top of a key 49 to push down a thumper shaft 48 that presses down a thumper 71 that thumps a patient's chest. Nowakowski also fixes the top of his thumper shaft 48 to a ventilation piston 80 that forces air out of a valve 56 and though a tube 27 to a reservoir that flows air to the patient. Nowakowski places his air-pumping piston 80 around his chest -compressing piston only to save space around his thumping piston. This is not the same as telescoping piston parts to reduce space above the actuator. His device certainly does not provide an actuator of small height and long stroke.

Claim 33 was also rejected as obvious on Hewson in view of Nowakowski. Hewson shows, in his Fig. 2, a single piston 48 that reciprocates in a cylinder. As discussed above, Nowakowski shows an air pumping piston that surrounds a chest compressing piston, rather than telescoping piston parts. Neither reference shows telescoping piston parts, which result in a more compact actuator for carrying by an emergency worker and in the stacking of patients. Accordingly, applicant believes that claim 1 is not anticipated by the references and should be allowed.

Claim 34, which depends from claim 33, was rejected on the same references as claim 33, that is, on Arpin in view of Nowakowski, or on Hewson in view of Nowakowski. Claim 34 describes the inside diameter of the inner piston

part (66 in applicant's Fig. 2) being at least half the inside diameter of the outer piston part (64). Applicant uses a large inner piston part to obtain a large force (e.g. 100 to 120 pounds). Not Arpin nor Nowakowski nor Hewson show telescoping piston parts, so they do not anticipate claim 34. Applicant notes that in Nowakowski, where his two pistons 48 and 39 are located one around the other rather than in tandem to telescope, his smaller piston that thumps on the patient's chest, has a diameter that is about one-third (less than ½) that of his larger piston that pumps air to a reservoir that leads to the patient's mouth. Thus. Claim 34 is not anticipated by the references.

Claim 35, which depends from claim 33, was rejected as obvious over Arpin in view of Nowakowski and in further view of Kelly, or as obvious over Hewson in view of Nowakowski in further view of Kelly, the main reference being Kelly. Claim 35 describes means such as shown at 118 (a pressure sensor) that senses recovery of the patient's chest (when it has moved up after having been compressed), for automatically controlling the instant when the patient's chest is pressed down again. In Kelly, he describes a belt 282 (his fig. 10) that compresses the patient. He also states (col. 12, lines 11-13), "This indicator should have some means for alerting the rescuer when full release of the tension on the belt has not occurred." He is measuring relaxation of his compressing belt not recovery of the patient's chest.

Claim 36, which depends from claim 33, was rejected on the references applied to claim 33, in view of McClain. Claim 36 describes a single pressing member (202 in applicant's Fig. 7) lying on the vertical axis of the piston and being pivotable about horizontal axes (208 and 209). This allows the pressing member to press evenly against the chest even if the actuator has tilted. McCain shows, in his fig. 1, two pressing members 70 that are each pivotally connected to an arm 56 that is fixed to a plunger 44. His arrangement cannot press against the chest of the patient above the lungs for maximum breathing, because his

pressing members do not lie on his actuator vertical axis.

Claim 37, which depends from claim 33, was rejected on Arpin in view of Nowakowski and on Hewson in view of Nowakowski. Claim 37 describes a stabilizer (e.g.130 in applicant's Fig. 1), which is connected to the cylinder (which is stationary) and which extends completely around the actuator without a gap of more than 90°. Arpin shows, in his Fig. 1, a pair of stabilizer elements (not numbered) that extend around his pad 43 that presses against the patient's chest. His Fig. 2 shows that there are gaps of more than 90° around his pad 43, which could allow more tilt of his actuator. Nowakowski's fig. 7 does not show any stabilizer. Hewson does not clearly show the construction of a stabilizer.

Claim 38 is largely similar to claim 33 and was rejected on the same references. Claim 38 describes telescoping first and second interfitting piston parts such as shown in applicant's Fig. 2, with the second (inner) piston part lying below the first (outer piston part). The only reference showing two pistons is Nowakowski, but his outer piston merely has a large central hole to lie around the inner one to save space. His outer piston is used to compress air while his inner one is used to thump the patient's chest. Nowakowski is not really relevant to telescoping pistons in a chest compressor to save vertical space while maintaining the same vertical piston stroke length.

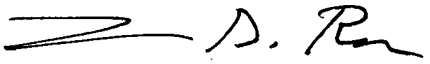
Claim 39, which depends from claim 38, describes the fitting portion (at 80 and 82 in Fig. 2) of the second (inner) piston having a diameter at least half that of the first (outer) outer piston. Even in Nowakowski, where one piston lies in the other (but does not telescope), the inner piston has a diameter much less than one half (it is about one third, so its area is one-ninth that of the outer piston).

Claim 40, which depends from claim 38, was rejected on the same references as claim 38 and McClain. Claim 40 describes a pressing member (202 in Fig. 7) that is pivotally connected about horizontal axis (208, 209) that lie on the vertical cylinder axis. In McClain his pressing members are pivotally

mounted about axes that are not close to the vertical axis of his plunger.

It is respectfully urged that for these reasons a reversal of the Examiner is in order. An oral hearing is not requested.

Respectfully submitted,



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APPENDIX TO BRIEF
CLAIMS 33 - 40

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33. Apparatus for applying compressions to the chest of a patient to at least stimulate blood circulation, which includes an energizable actuator that repeatedly presses down against the patient's chest area when the patient's chest faces upward, and a torso wrap that is coupled to said actuator and that wraps to the back of the patient, said actuator including a stationary frame, a reciprocating member, and means for cycling said reciprocating member relative to said frame to repeatedly press said reciprocating member down toward the patient's chest during a part of each cycle, wherein:

said reciprocating member includes a cylinder forming said stationary frame and at least two piston parts that telescope one into the other including an outer piston part that is slideable in said cylinder, and an inner piston part that is slideable in said outer piston part;

said outer piston part being slideable downward in said cylinder to a position wherein a lower end of said outer piston part lies below a lower end of said

cylinder, and said inner piston part being slideable downward in said outer piston part to a position wherein a lower end of said inner piston part lies below a lower end of said outer piston part, to thereby minimize the height of the actuator;

said means for cycling said reciprocating member urging both of said piston parts downward during a part of each cycle when said reciprocating member is pressed down.

34. The apparatus described in claim 33 wherein said means for cycling includes a source of pressurized gas connected to said cylinder, and wherein:

said inner piston part has an inside diameter at least half the inside diameter of said outer piston part.

35. The apparatus described in claim 33 including:

means for sensing recovery of the patient's chest, for automatically controlling the instant in each cycle at which said means for cycling begins to again move said reciprocating member to depress the patient's chest.

36. The apparatus described in claim 33 wherein said cylinder has an axis that is primarily vertical when the patient's chest faces upward, and including:

a single pressing member lying on said axis and pivotally connected to a lower end of said piston to enable said pressing member to pivot about horizontal axes, said pressing member having a lower surface for pressing against the patient's chest.

37. The apparatus described in claim 33 wherein said actuator has an axis that is primarily vertical, and including:

a stabilizer connected to said cylinder, said stabilizer extending completely around said actuator without a gap of more than 90° as measured about said axis.

38. Apparatus for repeatedly pressing down against a patient's chest when the chest faces upwardly, including a cylinder, a piston that is moveable in said cylinder, and a source of pressured gas that repeatedly applies pressured gas to said cylinder to move said piston down against the patient's chest, wherein:

said piston includes a plurality of telescoping piston parts including a first piston part with a fitting portion that fits closely to said cylinder and is moveable downward to a lowest position wherein a lower end of said first piston part lies below said cylinder, and a second piston part with a fitting portion that fits closely to said first piston part and that is moveable downward to a position wherein a lower end of said second piston part lies below said lower end of said first piston part in said lowest position of said first piston part.

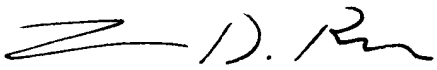
39. The apparatus described in claim 38 wherein:

said fitting portion of said second piston part has a diameter that is at least one-half the diameter of said fitting portion of said first piston part.

40. The apparatus described in claim 38 wherein said cylinder has a primarily vertical axis, and including:

a pressing member that is connected to a lower end of said second piston part in a pivot joint that allows said pressing member to pivot about horizontal axes that all pass through said primarily vertical axis.

Respectfully submitted,



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